

Amendments To The Drawings:

Attachment: Two Replacement sheets, with formal drawings for Figures 1-5.

Attached please find the formal drawings from the equivalent European patent EP 1 211 994. These are believed to overcome the objections to the drawings contained in this office action.

Remarks

This Amendment is in response to the Office Action dated **March 15, 2007**. The office action objected to the drawings, objected to the specification, rejected claims as indefinite, rejected claims as anticipated and rejected claims as obvious.

In response, applicant has filed formal drawings, amended the specification and amended the claims.

Objection to the Drawings

Attached please find the formal drawings from the equivalent European patent EP 1 211 994. These are believed to overcome the objections to the drawings contained in this office action.

Objections to the Specification

The term “fixateur” refers to external fixation systems, as shown in the attached article from Wildpedia.org. Especially in France external fixation systems are called “fixateur” or “fixateur externe”. Therefore, a person of ordinary skill in the art would have no trouble understanding the use of the term “fixateur” in the present application.

Applicant has amended the two paragraphs starting on page 4, line 12 so they no longer refer to the claims.

Therefore, the objections to the specification are believed to now be moot.

§112 Rejections

Claims 1, 5 and 17 have been amended to overcome the §112 rejections. Claims 2 and 3 have been cancelled. The §112 rejections are now believed to be overcome.

§102 Rejection

Claims 4, 5, 14 and 15 were rejected under §102 as anticipated by Pawluk.

Pawluk (US 4,955,886) discloses reconstruction and fracture plates provided with simple screw holes 26, 28 suitable for receipt of attachment screws. In use, screws are loosely inserted into the holes and anchored in the bones only. Contrary to the inventive fixation system, the screws are not fixed in the holes.

Although claims 4 and 5 currently require that the screws are **fixed** in the holes, and therefore currently distinguish over Pawluk, applicant has amended claims 4, and 15 to further distinguish over Pawluk by requiring that **the head of the screw is adapted to be fixedly anchored in the forced carrier**. The §102 rejection is believed to be overcome.

The §103 Rejection

Claims 1-3, 8-13 and 17 were rejected as obvious over Pawluk in view of Wagner. Wagner (US 6,454,769) discloses a specific system for stabilizing the human spine with a bone plate. For reducing the occurrence of screw backout from a bone, the screws in the end boreholes may be obliquely angulated with respect to the plate. According to figures 5 and 6 of Wagner, showing cross-sectional views, the screws are obliquely angulated in a transverse direction of the plate.

Expandable respectively contractible rings may be positioned within each borehole between the plate and each screw head to fixedly connect the screw to the plate (col. 2, line 45 to col. 3, line 8). Because the screws are attached to the plate and not just the bone, the screws will remain connected to the plate if backout occurs so that they cannot easily contact internal tissue structures (col. 1, lines 64 to col. 2, line 2).

Hence, the arrangement of the screws in the bone plate in Wagner is specific for

stabilization of the human spine. The fracture plate disclosed in Pawluk, figures 3 and 4, is not suitable for stabilizing the human spine, i.e. for correction of spinal deformities and for fusion of a vertebrae. Therefore, the person of ordinary skill in the art would not provide the plate of Pawluk with rings and screws with conical heads from Wagner specific for bone plates for the human spine.

Claims 1-3, 8-13 and 17, as currently amended, are believed to distinguish over Pawluk in view of Wagner. Claims 6-7 and 16 currently stand withdraw.

Applicant respectfully requests that claims 1, 4-15 and 17 be allowed.

Respectfully submitted,

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External fixation

From Wikipedia, the free encyclopedia

External fixation is a surgical treatment used to set bone fractures in which a cast would not allow proper alignment of the fracture. In this kind of reduction, holes are drilled into uninjured areas of bones around the fracture and special bolts or wires are screwed into the holes. Outside the body, a rod or a curved piece of metal with special ball-and-socket joints joins the bolts to make a rigid support. The fracture can be set in the proper anatomical configuration by adjusting the ball-and-socket joints. Since the bolts pierce the skin, proper cleaning to prevent infection at the site of surgery must be performed.



An example of an external fixator which is being used in the treatment of a fractured radius bone.

Installation of the **external fixator** is performed in an operating room, normally under general anesthesia. Removal of the external frame and bolts usually requires special wrenches and can be done with no anesthesia in an office visit.

External fixation is usually used when internal fixation is contraindicated- often to treat open fractures, or as a temporary solution.

External fixation is also used in limb lengthening. People with short limbs can have, for example, legs lengthened. In most cases the thigh bone (femur) is cut diagonally in a surgical procedure under anesthesia. External fixator pins or wires (as above) are placed each side of the 'man made fracture' and the external metal apparatus is used to very gradually push the two sides of the bone apart millimetre by millimetre day by day and week by week. Bone is extremely clever tissue and will gradually grow into the small gap created by this 'distraction' technique. Such a process can take many months.

In most cases it may be necessary for the external fixator to be in place for many weeks or even months. Most fractures heal in between 6 and 12 weeks. However, in complicated fractures and where there are problems with the healing of the fracture this may take longer still. It is known that bearing weight through fracture by walking on it, for example, with the added support of the external fixator frame actually helps fractures to heal.

There are two main kinds of external fixators. One is known as mono-lateral fixation (see photograph) where the metal external structure is on one side of the limb. The other is circular fixation (also known as Ilizarov Fixation after its Russian Inventor) and in this case the metal structure is circular and surround the limb.

For those who must live their lives with an external fixator things can be quite difficult. It can be quite scary having pieces of metal sticking out of a limb. People often stare at external fixator 'wearers' in the street. Sometimes there is pain and strange sensations. The 'pin sites' where the metal work enters the skin and goes into the bone can be a source of infection. People with external fixators are usually taught by the hospital staff how to carry out the wound care of the pin sites for themselves and they return to the hospital for regular check-ups or if they have problems.

See also

- Open reduction internal fixation

External links

- AO Surgery Reference
- [1] The Ilizarov and External Fixator Wearer's Support Group

[de:Fixateur externe]]

Retrieved from "http://en.wikipedia.org/wiki/External_fixation"

Category: Medical treatment stubs

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